03050104-010

(Wateree River/Lake Wateree)

General Description

Watershed 03050104-010 is located in Fairfield and Kershaw Counties and consists primarily of the ***Wateree River*** and its tributaries as it flows through ***Lake Wateree***. The watershed occupies 208,964 acres of the Piedmont region of South Carolina. The predominant soil types consist of an association of the Wilkes-Wateree-Rion-Madison series. The erodibility of the soil (K) averages 0.24 and the slope of the terrain averages 17%, with a range of 2-45%. Land use/land cover in the watershed includes: 88.9% forested land, 5.9% water, 2.2% scrub/shrub land, 1.3% agricultural land, 0.9% forested wetland, 0.7% urban land, and 0.1% barren land.

The Catawba River flows out of the Cedar Creek Dam and is joined by Cedar Creek (Bell Branch, Rocky Creek, Gar Creek), McDowell Creek, Crooked Creek, and the Big Wateree Creek watershed to form the headwaters of the Wateree River and Lake Wateree. Duke Power Company oversees operation of Lake Wateree, which is used for power generation, water supply, and recreational purposes. Little Wateree Creek originates near the Town of Winnsboro and accepts drainage from Horse Creek, McCulley Creek, Ready Creek, Minton Creek (White Oak Branch), and Horse Branch before flowing into the Big Wateree Creek embayment. Langley Branch enters the lake just downstream of the confluence, and Taylor Creek and Dutchmans Creek (Cedar Fork, Lots Fork) form arms of the lake near Lake Wateree State Park. Moving downlake, streams draining into the lake include: Singleton Creek (McDow Creek, Rocky Branch), Rochelle Creek, June Creek, Fox Creek, Beaver Creek (Tranham Creek, Showerbath Branch, Little Beaver Creek), Stillhouse Branch, Colonel Creek, and White Oak Creek. Lake Wateree State Park, located near Dutchmans Creek, is another natural resource in the area. There are a total of 470.5 stream miles and 11,856.3 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
CW-231	W/INT	FW	LAKE WATEREE HEADWATERS, 50 YDS DS OF CEDAR CK CONFLUENCE
CW-040	S/W	FW	LITTLE WATEREE CREEK AT S-20-41 5 MI E OF WINNSBORO
RS-02321	RS02	FW	DUTCHMANS CREEK AT S-20-106
CW-692	BIO	FW	DUTCHMANS CREEK AT S-20-21
CW-076	BIO	FW	BEAVER CREEK AT S-28-13
CW-208	P/W	FW	LAKE WATEREE AT S-20-101, 11 MI ENE OF WINNSBORO
RL-02314	RL02	FW	LAKE WATEREE 1.0 MI SW FROM MOUTH OF BEAVER CREEK
CW-207	P/W	FW	LAKE WATEREE AT END OF S-20-291
CW-693	BIO	FW	WHITE OAK CREEK AT S-28-696
RL-01003	RL01	FW	LAKE WATEREE 11.25 MI NW OF CAMDEN ON W SHORE OF LAKE
CW-209	P/W	FW	LAKE WATEREE AT SMALL ISLAND 2.3 MI N OF DAM
RL-01033	RL01	FW	LAKE WATEREE 9.7 MI NW OF CAMDEN, TOWARD THE S END OF LAKE
CL-089	INT	FW	LAKE WATEREE IN FOREBAY EQUIDISTANT FROM DAM & SHORELINES

Lake Wateree – There are eight SCDHEC monitoring sites along Lake Wateree. Aquatic life uses are not supported at the headwaters site ***(CW-231)*** due to turbidity and total phosphorus excursions. Recreational uses are fully supported at this site; however, there is a significant increasing trend in fecal coliform

bacteria concentration. At the next site downstream ***(CW-208)***, aquatic life uses are not supported due to pH, total phosphorus, and chlorophyll-*a* excursions. There is also a significant increasing trend in total suspended solids. Recreational uses are fully supported at this site. Further downstream ***(RL-02314)***, aquatic life uses are not supported due to pH and total phosphorus excursions. Recreational uses are fully supported at this site.

Aquatic life uses are not supported at the next site downstream ***(CW-207)*** due to pH and total phosphorus excursions. There is also a significant increasing trend in total suspended solids. Recreational uses are fully supported at this site and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. Further downstream ***(RL-01003)***, aquatic life and recreational uses are fully supported. Continuing downstream ***(CW-209)***, aquatic life uses are not supported due to pH and total phosphorus excursions, compounded by a significant increasing trend in pH. There is also a significant increasing trend in total suspended solids. A significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter. Recreational uses are fully supported at this site and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Further downstream at the next site ***(RL-01033)***, aquatic life and recreational uses are fully supported. At the furthest downstream site ***(CL-089)***, aquatic life uses are partially supported due to pH excursions. Recreational uses are fully supported at this site. *Fish tissue samples from Lake Wateree indicate no advisories are needed at this time.*

Lake Wateree was treated with aquatic herbicides in 2000, 2001, and 2005 in an attempt to control aquatic macrophyte growth that has impaired boating, swimming and public access in certain areas of the lake. In addition, fall and winter drawdowns were utilized to help eliminate macrophyte growth.

Little Wateree Creek (CW-040) - Aquatic life uses are not supported due to dissolved oxygen excursions, compounded by a significant decreasing trend in dissolved oxygen. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are partially supported; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Dutchmans Creek – There are two SCDHEC monitoring sites along Dutchmans Creek. Aquatic life uses are fully supported at the upstream site ***(RS-02321)***. Recreational uses are not supported due to fecal coliform bacteria excursions. At the downstream site ***(CW-692),*** aquatic life uses are fully supported based on macroinvertebrate community data.

Beaver Creek (CW-076) - Aquatic life uses are fully supported based on macroinvertebrate community data.

White Oak Creek (CW-693) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-059	GB	PIEDMONT BEDROCK	LAKE WATEREE STATE PARK

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
LAKE WATEREE NOSOCA PINES RANCH PIPE #: 001 FLOW: .025	SC0033651 MINOR DOMESTIC
LAKE WATEREE US AIR FORCE/WATEREE RECREATION PIPE #: 001 FLOW: 0.01	SC0044440 MINOR INDUSTRIAL
MCCULLEY CREEK TOWN OF WINNSBORO/WTP PIPE #: 001 FLOW: 0.01	SCG645027 MINOR DOMESTIC

Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
FAIRFIELD COUNTY CARLISLE PIT	0336-39 SAND
FAIRFIELD COUNTY ROCHELLE MINE	0848-39 CLAY
NEW ENGLAND STONE IND., INC. KERSHAW MINE	0556-55 GRANITE
CAROLINA QUARRIES CONGAREE QUARRY	0405-57 GRANITE

Water Quantity

WATER USER *STREAM*	*REGULATED CAPACITY (MGD)* *PUMPING CAPACITY (MGD)*
LUGOFF-ELGIN WATER AUTHORITY LAKE WATEREE	5.2 7.8
CITY OF CAMDEN LAKE WATEREE	9.0 12.0

Growth Potential

There is a moderate to high potential for continued residential and commercial development adjacent to Lake Wateree and the Town of Winnsboro. Public water is available along S.C. Hwy. 34, which runs between the Towns of Winnsboro and Ridgeway, and plans are being developed to extend public sewer along this corridor.

Watershed Protection and Restoration

Special Projects

Catawba Wateree FERC Re-licensing

The Federal Energy Regulatory Commission (FERC) is the agency that licenses, inspects, and oversees environmental matters related to most hydroelectric (hydro) projects. FERC licenses, which regulate the design and operation of those projects, are issued for a term of 30 to 50 years. The relicensing process typically begins 5 years before the current license expiration date and involves the applicant providing information to state and federal resource and regulatory agencies, as well as other interested parties. During traditional licensing process, environmental issues such as water quality, minimum flow releases from dams and endangered species are addressed by states through 401 certifications required prior to new licenses being issued.

In the Catawba River watershed, Duke Power operates 13 hydro facilities and 11 reservoirs on the Catawba River in North and South Carolina. Seven of these facilities and 5 reservoirs are located in South Carolina, including **Lake Wateree**. All these facilities are regulated through a single license, which expires in 2008. Duke Power has initiated a "hybrid" relicensing process, which includes a collaborative process involving stakeholder negotiations, in addition to the traditional process. The Department is actively participating in the collaborative process as well as the traditional process, and Duke will apply for §401 Certification in 2006. More information about Catawba Wateree FERC relicensing can be found on the Duke Power website at: http://www.catawbahydrolicensing.com/.

NPS Assessment and TMDL for Phosphorus in the Catawba River Basin

In June 2003, researchers at the University of South Carolina completed a §319-funded study of nutrient loading in the lower Catawba River basin using the WARMF (Watershed Analysis Risk Management Framework) water quality model. The model estimated that the lower Catawba (defined as the Catawba River downstream of the Lake Wylie dam and all tributaries through Lake Wateree) received an average load of 2100 kg/day of phosphorus for the 1996-1998 study period. Of this load, 46% was from point sources, 39% was from nonpoint sources, and 15% was from Lake Wylie. SCDHEC is currently using the WARMF model, which is being updated through 2003, to further refine nonpoint sources, to determine loading rates that would allow the reservoirs to meet the phosphorus standard (TMDLs), and to calculate wasteload allocations for phosphorus for the impaired reservoirs. Cooperators in the study include Catawba River stakeholders, North Carolina DWQ, and EPA Region 4.